

IN THE CLAIMS

Please amend the claims as follows:

Claim 1: A semiconductor device comprising:

a substrate;

an insulating film formed above the substrate and including a metal, Si, N and O, the insulating film including metal-N bonds, the metal-N bonds distributed throughout the thickness of the insulating film in an amount of 1 atomic% or more; and

an electrode formed above the insulating film.

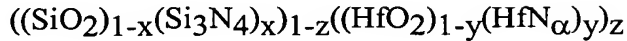
Claim 2 (Canceled)

Claim 3 (Original): The semiconductor device according to claim 1, wherein a content of the metal in the insulating film is 47 atomic% or more based on the total amount of the metal and Si.

Claim 4 (Previously Presented): The semiconductor device according to claim 1, wherein the metal included in the insulating film comprises at least one selected from the group consisting of Zr, Hf and lanthanoid series metals.

Claim 5 (Previously Presented): The semiconductor device according to claim 4, wherein the metal comprises Hf, and the insulating film includes Si-O, Si-N, Hf-O and Hf-N bonds.

Claim 6 (Original): The semiconductor device according to claim 5, wherein the insulating film has the composition represented by formula below:



where $0 < x, y, z < 1$, $\alpha = 4/3$.

Claim 7 (Previously Presented): The semiconductor device according to claim 1, wherein the substrate has impurity diffusion regions separately formed and the insulating film comprises a gate insulating film formed between the impurity diffusion regions, and the electrode comprises a gate electrode.

Claim 8 (Currently Amended): A semiconductor device comprising:

a substrate;

an insulating film formed above the substrate and including a metal, Si, N and O, the insulating film being amorphous and including a metal-N bonds, the metal-N bonds distributed throughout the thickness of the insulating film in an amount of 1 atomic% or more; and

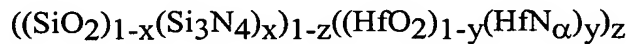
an electrode formed above the insulating film.

Claim 9 (Canceled).

Claim 10 (Original): The semiconductor device according to claim 8, wherein the metal contained in the insulating film comprises at least one selected from the group consisting of Zr, Hf and lanthanoid series metals.

Claim 11 (Previously Presented): The semiconductor device according to claim 10, wherein the metal comprises Hf and the insulating film includes Si-O, Si-N, Hf-O, and Hf-N bonds.

Claim 12 (Original): The semiconductor device according to claim 11, wherein the insulating film has the composition represented by formula below:



where $0 < x, y, z < 1$, $\alpha = 4/3$.

Claim 13 (Withdrawn): A method for manufacturing a semiconductor device comprising:

forming an insulating film containing a metal, Si, N and O, above a substrate by an off axis sputtering method, the insulating film containing metal-N bonds larger than the sum total of metal-metal bonds and metal-Si bonds; and

forming an electrode above the insulating film.

Claim 14 (Withdrawn): The method for manufacturing a semiconductor device according to Claim 13, further comprising:

doping an impurity into the substrate, after forming the electrode, by fusing the electrode as a mask to form an impurity diffusion region.

Claim 15 (Withdrawn): A method for manufacturing a semiconductor device comprising:

forming a nitride film having a off-stoichiometric composition containing a metal and Si above a substrate by an off-axis sputtering method;

oxidizing the nitride film to form an insulating film containing metal-N bonds larger than the sum total of metal-metal bonds and metal-Si bonds; and

forming an electrode above the insulating film.

Claim 16 (Withdrawn): The method for manufacturing a semiconductor device according to Claim 15, further comprising:

doping an impurity into the substrate, after forming the electrode, by using the electrode as a mask to form an impurity diffusion region.

Claim 17 (Withdrawn): A method for manufacturing a semiconductor device comprising:

forming an oxide film having a off-stoichiometric composition containing a metal and Si above a substrate by an off-axis sputtering method;

nitriding the oxide film to form an insulating film containing metal-N bonds larger than the sum total of metal-metal bonds and metal-Si bonds; and

forming an electrode above the insulating film.

Claim 18 (Withdrawn): The method for manufacturing a semiconductor device according to claim 17, further comprising:

doping an impurity into the substrate, after forming the electrode, by using the electrode as a mask to form an impurity diffusion region.

Claim 19 (Withdrawn): A method for manufacturing a semiconductor device comprising:

forming a metal silicide film having a off-stoichiometric composition containing a metal and Si above a substrate by an off-axis sputtering method;

oxynitriding the metal silicide film to form

an insulating film containing metal-N bonds larger than the sum total of metal-metal bonds and metal-Si bonds; and

forming an electrode on the insulating film.

Claim 20 (Withdrawn): The method for manufacturing a semiconductor device according to claim 19, further comprising:

doping an impurity into the substrate, after forming the electrode, by using the electrode as a mask to form an impurity diffusion region.

Claim 21 (Currently Amended): A semiconductor device comprising:
a semiconductor substrate comprising a channel region;
an insulating film formed above the channel region of the semiconductor substrate and including a metal, Si, N and O, the insulating film having a spectrum peak at a bonding energy of a metal-N bond and including a metal-N bonds, the metal-N bonds distributed throughout the thickness of the insulating film in an amount of 1 atomic% or more;
a gate electrode formed above the semiconductor substrate; and
a pair of source/drain regions sandwiching the channel region of the semiconductor substrate.

Claim 22 (Original): The semiconductor device of claim 21, wherein the insulating film has no spectrum peak at a bonding energy of a metal-metal bond.

Claim 23 (Original): The semiconductor device of claim 21, wherein the insulating film has other spectrum peaks at binding energies of a metal-O bond, a Si-O bond and a Si-N bond, and the insulating film has no other spectrum peak(s) at a binding energy.